

MSCS student at UCAS, actively looking for research intern position (Feb - Aug 2020) and Ph.D. program.

🎓 EDUCATION

Nanyang Technological University	Singapore
<i>Visiting Researcher, Institute for Media Innovation</i>	Nov 2019 - Dec 2019
University of Chinese Academy of Sciences	Beijing, China
<i>MSCS student, Institute of Software</i>	Sep 2019 - June 2022
University of Science and Technology Beijing	Beijing, China
<i>Bachelor of Engineering in Computer Science and Technology</i>	Sep 2015 - June 2019
<i>Overall Score: 91.88/100 Rank: 6/159</i>	
National Taipei University of Technology	Taipei, China
<i>Sponsored Exchange Program, Overall Score: 94.85/100</i>	Sep 2017 - Jan 2018

📖 PUBLICATIONS (*Equal Contribution)

- **Zechen Bai**, Naiming Yao, Fengchun Qiao, Boyu Li, Hui Chen, Hongan Wang. “**ADAPTIVE EMOTION-AWARE TALKING FACE GENERATION**”, under review.
- Li Wang*, **Zechen Bai***, Yonghua Zhang, Hongtao Lu. “**Show, Recall, and Tell: Image Captioning with Recall Mechanism**”, accepted by *The Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-2020)*.

👜 INTERNSHIP EXPERIENCE

Research Intern, AI Lab, ByteDance (Tik Tok)	Beijing, China
<i>In Visual Search Team supervised by Yonghua Zhang and Wei-Ying Ma (IEEE Fellow)</i>	Feb 2019 – Aug 2019

- Devised, implemented and deployed an object grounded Image-Text matching model for image retrieve task. It's based on the Siamese network and the SOTA method of object detection. Attention mechanism and triplet hard negative mining are introduced. It has been **deployed in Toutiao**, providing an objects grounded ranking score for Toutiao image retrieving.
- Proposed a novel and robust Image Captioning method based on recall mechanism, which achieves state-of-the-art performance on MSCOCO dataset and online evaluation. This work has been **accepted by AAAI-2020**.
- Devised a semi-supervised similar image retrieving approach and a cluster-based recall strategy for retrieving. Integrating classification loss, triplet loss and unsupervised loss, the approach is feasible to handling dataset with unbalance distribution. It has been **deployed in TikTok** app, presented as a new feature called 'ShiTū'.

Algorithm Engineer Intern, Infimind Tech	Beijing, China
<i>Fine-grained image classification in fashion field</i>	Oct 2018 – Dec 2018

- Applying Computer Vision to clothing attributes labeling, such as collar, sleeve, which can be widely used in clothing retrieving and other fashion fields.
- Implemented a model based on Keras and TensorFlow, which ensembled multi backbones include VGG, DenseNet, etc. **Carefully designed loss function**, data augmentation, attention mechanism and multi-task learning are introduced to boost the performance. It achieves the max accuracy 90+% of single attribute and the average accuracy 85% of multi-attributes on the e-commerce clothing test set. The model has been **deployed in ECPro** system.

System Engineer Intern, Core System Team, Douban	Beijing, China
<i>Participated in the development of distributed computing framework Dpark.</i>	Jan 2018 – Mar 2018

- Developed and tested the TFRecords RDD. Deeply understood the TFRecords format details in computer memory. Designed an algorithm to split its sequential data precisely while making CRC32 check as efficient as possible.
- Optimized GZip RDD, decoupling the decompression and splitting process, adopting them to a cascade fashion. The part of the code has been **merged to master** branch Dpark repository.

☰ CAMPUS ACTIVITIES

- Key member of the 'LIZHI' program, alumni joint advising program May 2018 - June 2019
- Beijing-HongKong Youth Leadership Summer Camp July 2017
- C/C++ language student lecture hired by USTB Sep 2016 - June 2019

🏆 HONORS AND AWARDS

June 2019	Outstanding Graduate granted by Beijing Government
May 2017	SCCE Light - the Youth Outstanding Honor granted by SCCE, USTB
May 2017	China Undergraduates Computer Design Competition, <i>2nd prize in Beijing district</i>
2015 - 2018	The People's Scholarship granted by USTB (< 5%, 4 times)

☰ SKILLS

Languages:	Python, C/C++, Shell, Java, SQL, 数学, Markdown, Verilog, Matlab.
Frameworks/Tools:	Keras, PyTorch, TensorFlow, Linux, Thrift, Git, Hadoop, Web Scraping.
Machine Learning:	Deep Learning, Computer Vision, Visual Search, Representation Learning, Image Caption, GAN.

我目前正在中国科学院大学攻读计算机硕士学位，希望寻找一个实习机会，时间约为 2020 年 2 月至 8 月。

🎓 教育

南洋理工大学, Computer Science , 访问学生	新加坡
Institute for Media Innovation	2019 年 11 月 - 2019 年 12 月
中国科学院大学, 计算机科学与技术 , 硕士在读	中国, 北京
软件研究所	2019 年 9 月 - 至今
北京科技大学, 计算机科学与技术 , 本科	中国, 北京
Overall Score: 91.88/100 Rank: 6/159	2015 年 9 月 - 2019 年 6 月
國立臺北科技大學, Computer Science , 交换学习	中国, 台北
Overall Score : 94.85/100	2017 年 9 月 - 2018 年 1 月

📖 学术论文 (* equal contribution)

- **Zechen Bai**, Naiming Yao, Fengchun Qiao, Boyu Li, Hui Chen, Hongan Wang. “**ADAPTIVE EMOTION-AWARE TALKING FACE GENERATION**”, under review.
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📁 实习经历

算法研究员实习生, **AI Lab**, 字节跳动 中国, 北京
视觉搜索组, 导师: 张永华, 马维英 2019 年 2 月 - 2019 年 8 月

- 设计并实现了一种基于目标检测的图文相关性模型, 并已**部署到今日头条**, 为图搜提供 objects grounded ranking score.
- 提出了一种具有创新性的图像描述生成 (Image Caption) 方法, 该方法在公开数据集上均取得了 state-of-the-art 的效果。**该工作已经被 AAAI-2020 接收**。
- 设计了一种半监督的相似图像搜索方法和一种基于聚类的召回优化策略, 在抖音大规模无监督数据集上表现良好。模型目前已经**上线到抖音 APP 识图新功能**。

算法工程师实习生, **极睿科技** 中国, 北京
服装垂直领域图像细粒度分类 2018 年 10 月 - 2018 年 12 月

- 利用计算机视觉, 针对服装不同属性的标签进行识别, 例如领型、袖长, 可广泛应用于服装检索等领域。
- 基于 TensorFlow 实现深度学习模型, 自主设计 Loss Function, 并采用多种策略优化模型。应用至电商服装测试集, 单个属性最高准确率达 90+%, 多属性平均准确率 85%, **模型已经上线至 ECPRO 产品**。

系统工程师实习生, **核心系统组**, 豆瓣 中国, 北京
基于 MapReduce 分布式框架 Dpark 开发 2018 年 1 月 - 2018 年 3 月

- 开发测试了 TFRecords 文件流的 RDD (一种弹性分布式数据集), 深入了解文件存储格式协议, 在文件存储底层 (最小单位 Byte) 对 TFRecords 进行精准切分。并设计算法, 使得尽量少的占用内存进行 crc32 校验。
- 优化 GZip RDD, 对 GZip 文件流的解压缩与切分进行解耦合、层次化处理。项目代码已经 **Merge 到 Dpark Repository Master**。

☰ 在校活动

- 北京科技大学校友联合培养项目“励志计划”成员 2018 年 5 月 - 2019 年 6 月
- 北京-香港青年领导力训练营成员 2017 年 7 月
- 北京科技大学学业发展与指导中心 C 语言讲师 2016 年 9 月 - 2019 年 6 月

🏆 奖励与荣誉

2019 年 6 月	北京市优秀毕业生 北京科技大学优秀三好学生 北京科技大学优秀学生干部
2015 - 2018	北京科技大学人民奖学金 (<5%, 4 次)
2018 年 10 月	全国大学生节能减排与社会实践科技竞赛, 国家级三等奖
2017 年 5 月	中国大学生计算机设计大赛, 北京市二等奖

</> 技能

编程语言: Python, C/C++, Shell, Java, SQL, \LaTeX , Markdown, Verilog, Matlab.
 框架/工具: Keras, PyTorch, TensorFlow, Linux, Thrift, Git, Hadoop, 爬虫.
 机器学习: Deep Learning, Computer Vision, Visual Search, Representation Learning, Image Caption, GAN.